

ABSTRACT OF THE DISCLOSURE

A Plasma processing method and apparatus exhibit excellent characteristics of reducing the amount of electric charge on a plasma-processed processing-object substrate and of preventing plasma damage and dielectric breakdown. Before the processing-object substrate is plasma-processed, top-and-bottom surfaces of the processing-object substrate are simultaneously subjected to a weak plasma in gas composed mainly of inert gas, which makes it possible to neutralize the charges on the processing-object substrate. The inert gas is any one of Ar, He, N₂, H₂, and vaporized H₂O gas or a mixed gas of these gases.